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What is claimed is:

1. A composition comprising at least one biodegradable polymer fiber wherein said fiber is composed of a first phase and a second phase, the first and second phases being immiscible, and wherein the second phase comprises one or more therapeutic agents.

2. The composition of claim **1**, wherein said second phase is derived from an aqueous solution, a hydrogel or polymer.

3. The composition of claim **1**, wherein said fiber forms a scaffold and further wherein, said second phase is manipulated to form an internal porous structure within the fiber.

4. The composition of claim **1**, wherein said fiber is woven, braided or knitted in an assembly with other fibers, and at least one fiber in the assembly comprises one or more therapeutic agents.

5. The composition of claim **1**, wherein the one or more therapeutic agents are distributed within the second phase in a nonhomogenous pattern.

6. The composition of claim **1**, wherein the concentration of said one or more therapeutic agents varies along the longitudinal axis of the fiber.

7. The composition of claim **6**, wherein the concentration of said one or more therapeutic agents varies linearly, exponentially or in any desired fashion, as a function of distance along the longitudinal axis of the fiber.

8. The composition of claim **1**, wherein the concentration of said one or more therapeutic agents decreases from a first end of the fiber to a second end of the fiber.

9. The composition of claim **1**, wherein said one or more therapeutic agents vary in a bidirectional manner, and the content of said one or more therapeutic agents increases from the first end of said fiber to a maximum and then decreases towards the second end of said fiber.

10. The composition of claim **1**, further comprising at least one biodegradable polymer fiber containing no therapeutic agent.

11. The composition of claim **1**, wherein said one or more therapeutic agents are selected from the group consisting of drugs, proteins, enzymes, growth factors, immunomodulators, compounds promoting angiogenesis, compounds inhibiting angiogenesis, anti-inflammatory compounds, antibiotics, cytokines, anti-coagulation agents, procoagulation agents, chemotactic agents, agents to promote apoptosis, agents to inhibit apoptosis, and mitogenic agents.

12. The composition of claim **1**, wherein said one or more therapeutic agents include a radioactive agent or a contrast agent for imaging studies.

13. The composition of claim **1**, wherein said one or more therapeutic agents is selected from the group consisting of viral vector, polynucleotide and polypeptide.

14. The composition of claim **1**, wherein said one or more therapeutic agents comprise an angiogenesis-promoting agent.

15. The composition of claim **14**, wherein said angiogenesis-promoting agent is vascular endothelial growth factor.

16. The composition of claim **1**, wherein said biodegradable polymer is a single polymer, a co-polymer, or a mixture of polymers selected from the group consisting of polypeptides, polydepsipeptides, nylon copolyamides, aliphatic polyesters, polydihydropyrans, polyphosphazenes, poly(ortho ester), poly(cyano acrylates), polyanhydride, modified polysaccharides and modified proteins.

17. The composition of claim **16**, wherein said aliphatic polyesters are selected from the group consisting of poly (glycolic acid), poly(lactic acid), poly(alkylene succinates) poly(hydroxybutyrate), poly(butylene diglycolate), poly (epsilon-caprolactone) and copolymers, blends and mixtures thereof.

18. The composition of claim **16**, wherein said modified polysaccharides are selected from the group consisting of cellulose, starch-alginate and the glycosaminoglycans, chondroitin sulfate, heparin, heparin sulfate, dextran, dextran sulfate, chitin, chitosan and chitosan sulfate.

19. The composition of claim **16**, wherein said modified proteins are selected from the group consisting of collagen and fibrin.

20. The composition of claim **1**, wherein said fiber comprises a plurality of polymer layers, wherein an outer layer circumscribes an adjacent inner layer.

21. The composition of claim **20**, wherein said plurality of layers optionally contain one or more therapeutic agents.